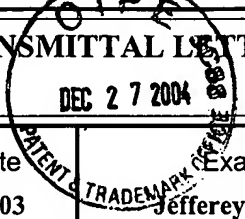
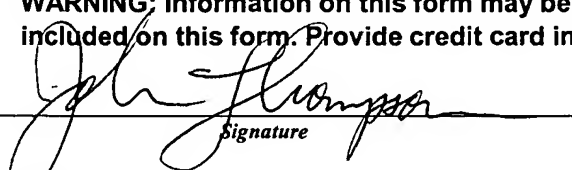
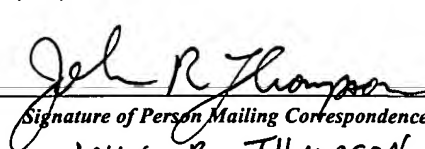


<b>AMENDMENT TRANSMITTAL LETTER (Small Entity)</b> Applicant(s): Jacob H. Gunther <div style="text-align: center;">  </div>				Docket No. <b>51764/3</b>	
Application No. <b>10/616,001</b>	Filing Date <b>July 9, 2003</b>	Examiner <b>Jefferey F. Harold</b>	Customer No. <b>32642</b>	Group Art Unit <b>2681</b>	Confirmation No. <b>1037</b>
Invention: <b>ECHO CANCELLATION FILTER</b>					
<b><u>COMMISSIONER FOR PATENTS:</u></b>  Transmitted herewith is an amendment in the above-identified application.  <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27  The fee has been calculated and is transmitted as shown below.					
<b>CLAIMS AS AMENDED</b>					
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST # PREV. PAID FOR	NUMBER EXTRA CLAIMS PRESENT	RATE	ADDITIONAL FEE
TOTAL CLAIMS	23 -	23 =	0 x	\$25.00	\$0.00
INDEP. CLAIMS	3 -	3 =	0 x	\$100.00	\$0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
<b>TOTAL ADDITIONAL FEE FOR THIS AMENDMENT</b>					<b>\$0.00</b>
<input checked="" type="checkbox"/> No additional fee is required for amendment. <input type="checkbox"/> Please charge Deposit Account No. _____ in the amount of _____ <input type="checkbox"/> A check in the amount of _____ to cover the filing fee is enclosed. <input checked="" type="checkbox"/> The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. <b>50-2375</b> <input checked="" type="checkbox"/> Any additional filing fees required under 37 C.F.R. 1.16. <input checked="" type="checkbox"/> Any patent application processing fees under 37 CFR 1.17. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <b>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</b>					
 <b>John R. Thompson</b> Registration No. 40,842 <b>STOEL RIVES LLP</b> 201 South Main Street, Suite 1100 Salt Lake City, UT 84111 Telephone: 801-578-6994 Facsimile: 801-578-6994			Dated: _____  <div style="border: 1px solid black; padding: 5px;">         I certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on  <div style="text-align: center;"> <b>12/22/04</b>          (Date)       </div> <div style="text-align: center; margin-top: 20px;">           Signature of Person Mailing Correspondence  <b>JOHN R THOMPSON</b>          Typed or Printed Name of Person Mailing Correspondence       </div> </div>		
cc:					

**CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)**

Applicant(s): Jacob H. Gunther

Docket No.

51764/3

Application No.

10/616,001

Filing Date

July 9, 2003

DEC 27 2004

Examiner

Jeffrey F. Harold

Customer No.

32642

Group Art Unit

2681

Invention: ECHO CANCELLATION FILTER

I hereby certify that this **Response (including the items listed below)**

(Identify type of correspondence)

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(Date)

**John R. Thompson**

(Typed or Printed Name of Person Mailing Correspondence)

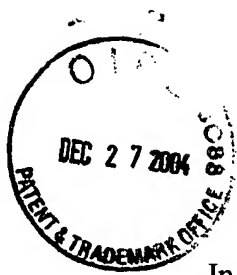
  
(Signature of Person Mailing Correspondence)**Note: Each paper must have its own certificate of mailing.**

Transmitted: Response

Transmittal Letter

Certificate of Mailing by First Class Mail

Postcard



Ifw

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

**Jacob H. Gunther**

Confirmation No. 1037

Application No. 10/616,001

Customer No. 32642

Filed: July 9, 2003

For: **ECHO CANCELLATION FILTER**

Group Art Unit: 2681

Examiner: Jefferey F. Harold

Date: December 22, 2004

RESPONSE

Mail Stop Amendment

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This paper is in response to the September 28, 2004 Office Action. The Applicant wishes to express appreciation to the Examiner for the interview conducted on December 20, 2004.

Claims 1-4, 11-14, and 18-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 6,151,397 to Jackson, Jr. II ("Jackson"). Jackson discloses a method and system for suppressing background noises in a communication environment. Jackson is contemplated for use in suppressing noises such as engine, exhaust system, tires etc. Col. 1, lines 21-32. Jackson cancels stationary and dynamic local noise signals, not echo from a far-end signal. Col. 2, lines 51-54. In canceling local noise, Jackson

teaches that local noise signals are converted to 180 degrees out-of-phase noise canceling signals. The noise canceling signals are introduced into the communication environment to suppress the local noise signals. Col. 3, lines 24-37. The introduced noise canceling signals improve the user's ability to hear the incoming call. Col. 6, lines 40-50. However, Jackson does not cancel an echo from a far-end signal and instead passes echoes.

The present invention performs echo cancellation generated by a far-end signal. All near-end signals are collectively captured by a microphone, including background noises. Thus, the present invention does not suppress local noise and instead passes local noise. A far-end signal is electronically filtered to generate an echo estimate. The received microphone signal includes the user's voice, the echo, and all local background noises. The echo estimate is electronically subtracted from the microphone signal to eliminate the echo. Nevertheless, background noises remain as noise suppression is a separate issue not addressed by the present invention.

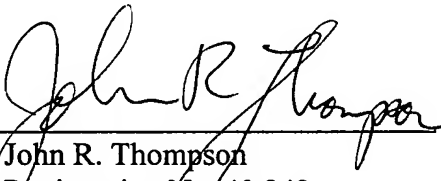
Jackson and the present invention seek to solve separate problems and, in so doing, require different techniques and hardware. For example, in order to function, Jackson requires as many receivers as there are sources. Col. 7, lines 10-14. In contrast, the present invention requires only one microphone. As an additional example, Jackson discloses that the noise suppression occurs in the communication environment prior to the user's ear. In the present invention, the echo cancellation occurs electronically by a processor implementing an algorithm.

Independent claims 1, 11, and 18 recite reducing echoes resulting from a far-end signal. This limitation is not found in Jackson. The independent claims further recite filtering the far-end signal to provide an echo estimate. This limitation is also not found in Jackson, as

Jackson does not filter or otherwise analyze a far-end signal. In fact, Jackson never mentions a far-end signal. In order to anticipate, "every element of the claimed invention must be identically shown in a single reference." In re Bond, 910 F.2d 831, 15 USPQ 2d 1566 (Fed. Cir. 1990). Claim limitations are not found in the cited prior art references, and the Applicant respectfully submits that independent 1, 11, and 18 claims represent patentable subject matter. As the remaining claims depend from their respective independent claim and necessarily include all limitations of the independent claim, they likewise represent patentable subject matter.

If there are any remaining issues of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,

By   
John R. Thompson  
Registration No. 40,842

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Attorney Docket No. 51764.3